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**BEFORE THE BOARD OF PATENT APPEALS
AND INTERFERENCES**

Application Number: 10/033,572
Filing Date: November 02, 2001
Appellant(s): SMITH, MALCOLM M.

Charles S. Fish (35870)
For Appellant

EXAMINER'S ANSWER

This is in response to the appeal brief filed 2-20-2007 appealing from the Office action mailed 9-6-2006.

(1) Real Party in Interest

A statement identifying by name the real party in interest is contained in the brief.

(2) Related Appeals and Interferences

The examiner is not aware of any related appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in the pending appeal.

(3) Status of Claims

The statement of the status of claims contained in the brief is correct.

(4) Status of Amendments After Final

The appellant's statement of the status of amendments after final rejection contained in the brief is correct.

(5) Summary of Claimed Subject Matter

The summary of claimed subject matter contained in the brief is correct.

(6) Grounds of Rejection to be Reviewed on Appeal

The appellant's statement of the grounds of rejection to be reviewed on appeal is correct.

(7) Claims Appendix

The copy of the appealed claims contained in the Appendix to the brief is correct.

(8) Evidence Relied Upon

6,728,919 US patent to Kondo

6,219,550 US patent to Obuchi

(9) Grounds of Rejection

The following ground(s) of rejection are applicable to the appealed claims:

Claim Rejections - 35 USC § 103

1. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

2. **Claims 1-40** rejected under 35 U.S.C. 103(a) as being unpatentable over Kondo (6728919), and further in view of Obuchi et al. (6219550).

As per **claims 1,17**, Kondo discloses a communication system in which the same data signal is sent from a first and second base station. The signals are divided into frames and are measured and manipulated on a frame by frame basis (ie. a first signal portion, a second signal portion ect.) (Col 1 line 49 to Col 2 line 17) (Col 3 lines 1-19). Signal characteristics including error rate and signal level are used to select the best received frame on a frame by frame basis. As per applicant's claim language, the first and third signals would be the first frames sent by base stations 1 and 2 and the second and fourth signals would be the second frame sent by base stations one and two. The 'first and second signal characteristics' would be the measured signal characteristics for the first and third signal portions. However, Kondo does not disclose an additional

function where the first and third signals are added or averaged together (instead of being selected from) based upon signal characteristics.

Obuchi teaches a site diversity communications system that implements both a selecting function and a composing (adding/averaging) function for received signal frames (Fig. 20 Col 34 lines 10-67). The appropriate function is performed based on a signal characteristic (error rate). Obuchi further teaches a selector that may selectively choose a signal (Col 34 lines 60-67), or selectively merge (add or average), via a composite function, the data signals based upon the signal characteristics (error rate) (Col 35 lines 1-25). Obuchi discloses the adding of signal portions in Figs. 7a-7c, 8a-8b as part of the composite function. Obuchi further teaches (Fig. 25) an embodiment where the signal portions are either combined (via composite devices 45a, 35) or individually selected (via selector 39c). Obuchi further discloses that this system improves the performance of the communications system (Col 35 lines 25-32). It would have been obvious to one of ordinary skill in the art at the time of this application to add the additional combining (composite) function together with the selecting function of Kondo's system for the purpose of increasing the performance of the system.

As per **claim 9**, claim rejected as a method performed by the device of the claim 1 rejection.

As per **claim 25**, claim rejected for same reasons as claim 1 rejection. Software (on a computer readable medium) is inherent to the cellular system for the purpose of controlling the hardware.

As per **claim 33**, claim rejected for same reasons as claim 1 rejection. Kondo's wireless network comprises first network 7 (inherently comprising a gateway for the purpose of interfacing with additional networks) (Fig. 1), base station controller 6, mobile station 5, and base stations 1,3.

As per **claims 2,10,18,26,34**, Kondo's signal quality measurements of signaling from the first base station is compared to that of the second base station (Col 2 lines 55-65) and the appropriate frame (first or third signal portion) is selected.

As per **claims 3,11,19,27,35**, the quality values comprise error-detection and signal size.

As per **claims 5,13,21,29,37**, the measurements and decisions are made on a frame by frame basis (ie. between a first and second frame, and then between a third and fourth frame). The best quality frames from the received signals are chosen and re-combined.

As per **claims 4,12,20,28,36**, Obuchi discloses that the signal characteristics (error rates) are averaged (Col 34 lines 30-50).

As per **claims 6-8,14-16,22-24,30-32,38-40**, Obuchi discloses a composing function that adds the signal sizes from the signals received from the base stations (Col

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22 lines 50-67, Figs. 7a-7c, 8a-8b). Obuchi further discloses that the error rate (a signal characteristic associated with a signal portion that comprises a signal size) is averaged (Col 34 lines 30-55). Examiner notes that averaging inherently (by definition) comprises adding.

(10) Response to Argument

As per applicant's arguments (page 10) that there is no cited motivation to combine the references. Examiner notes the previously cited portion of Obuchi (Col 35 lines 25-32). That discloses that the combining of signals leads to improved system performance. Additionally, both the Obuchi and Kondo references deal with site diversity. The concept of site diversity in communications is to provide multiple received signals that may be processed in a manner to improve the reception of the transmitted signal ('diversity' inherently comprises the motivation to improve the signal quality). Examiner contends that it would have been obvious for one skilled in the art to look to various mobile diversity systems for processing methods in order to improve the received signal quality in any other mobile diversity system.

As per applicant's arguments that there is no reasonable expectation of success in combining the Obuchi and Kondo references (pages 11,12), examiner disagrees. Both systems provide for multiple signals that are received (bit by bit), then processed by some sort of logic in order to produce an output signal with a lower error rate than by just receiving a single signal. Examiner contends that Kondo could easily add the signal processing taught by Obuchi into the diversity system, as Kondo –already- discloses a diversity system by signal processing to process

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the received signals into a single output signal. The processing steps taught by Obuchi could be added to the processor already implementing the signal processing steps of Kondo in order to produce applicant's claimed invention. While Kondo only discloses signal selection, Obuchi teaches signal selection or adding/averaging of received signals to produce an output signal (OBUCHI: Col 34 lines 63-67) in order to achieve the best possible error rate. Examiner notes that Kondo discloses that the received signals may also be analyzed and compared on a bit by bit basis (KONDO: Col 4 lines 56-67) in order to produce the most error free output signal as possible and would easily be able to implement the bit processing and selection/combination taught by Obuchi. Additionally, the 'signal portions' could be read as each individual bit.

As per applicant's argument that Obuchi does not disclose adding or averaging signal portions (pages 12-13), the examiner disagrees. Applicant states that the bit by bit majority determination based on error rate is not the same as adding or averaging signal portions as claimed by applicant. Examiner notes applicant's specification page 11 lines 10-20 that state that a bit error rate may be used as a criteria for signal selection or adding/averaging. Examiner further notes applicant's specification page 11 lines 18-25 that disclose that the 'signal portions' may be bits that may be compared by error rate measurements (Eb, CRC). Additionally examiner notes applicant's Figure 12 discloses the decoded bits from each diversity source being added/averaged. Obuchi discloses that decoded bits are added and averaged (OBUCHI: Fig. 8b step b2).

As per applicant's arguments regarding the Kondo reference only disclosing complete signal selection (page 14), examiner contends that Kondo discloses that the signal may be processed and compared on a bit-by-bit basis (KONDO: Col 4 lines 56-67). Further, applicant

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states that using error detection to compare the different signal portions is not the same as the claimed invention, however applicant's specification page 11 lines 18-25 disclose that the 'signal portions' may be bits that may be compared by error rate measurements (Eb, CRC).

Applicant's arguments pages 15-17 appear to be directed towards another case. They are not applicable to this case.

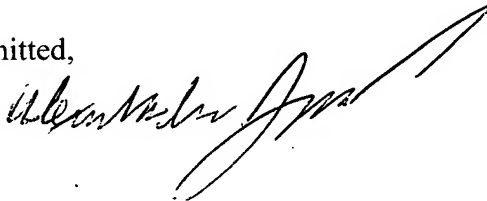
(11) Related Proceeding(s) Appendix

No decision rendered by a court or the Board is identified by the examiner in the Related Appeals and Interferences section of this examiner's answer.

For the above reasons, it is believed that the rejections should be sustained.


Respectfully submitted,

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